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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,274	01/28/2004	Hong Luo	200PP370A	3419
37535	7590	06/16/2006	EXAMINER	
NOVEON IP HOLDINGS CORP. 9911 BRECKSVILLE ROAD CLEVELAND, OH 44141-3247			KRASS, FREDERICK F	
			ART UNIT	PAPER NUMBER
			1614	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,274	LUO ET AL.	
	Examiner	Art Unit	
	Frederick Krass	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/26/04; 4/19/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Informalities

The following informalities are noted and should be corrected in responding to this

Office Action:

Claims 5 and 13, second line of each claim, in each instance the phrase “monomer is selected from” is duplicative and grammatically awkward and should be deleted.

Duplicate Claim Warning

Applicant is advised that should claim 8 be found allowable, claim 16 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The examiner believes this situation to be the result of a typographical error, insofar as “1” at the first line of claim 16 should in fact apparently read --- 10 ---. Correction is required.

Indefiniteness Rejection

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11-15, first line of each claim, in each instance there is no antecedent basis in the earlier claim(s) for reciting a “toothpaste formulation”; claim 9 recites a “method for stabilizing” instead.

Obviousness Rejection

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1) Claims 1-3 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rennie (USP 5,368,843).

The primary reference discloses thickeners comprising mixtures of a gum and an acrylic acid polymer. The gum may be a guar (column 1, lines 54-56) and the acrylic acid polymer a crosslinked acrylic acid copolymer, *i.e.* a carbopol. See the passage bridging the bottom of column 1 to the top of column 2. These mixtures are synergistically effective in controlling rheology, *i.e.* in increasing composition stability by maintaining a stable suspension or dispersion (column 1, lines 10-20). The reference discloses many commercial uses and specifically prepares a toothpaste (working example 6 at column 10) containing silica and alumina abrasives (both “multivalent cation containing agents” as recited instantly), sodium lauryl sulphate and sodium dodecyl benzene sulphonate surfactants, and a mixture of xanthan gum (“Shellflo-XA”) and an acrylic polymer (“Tiona-G”). The primary reference is not anticipatory insofar as one must “pick

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and choose” carbopols and guar gum from different lists within the disclosure, with no discrete embodiment (*e.g.*, a preferred formulation or working example) containing both being particularly set forth. That being said, it would have been obvious in a self-evident manner to have selected guar gum from one list and a carbopol from the other, motivated by their unambiguous disclosure and consistent with the basic principle of patent prosecution that a reference should be considered as expansively as is reasonable in determining the full scope of the contents within its four corners.

2) Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rennie (USP 5,368,843) in view of Lynch et al (USP 4,855,128).

The primary reference is discussed in subsection “1)” supra, and differs from the instant claims insofar as it does not specifically disclose an abrasive selected from dicalcium phosphate, tricalcium phosphate, calcium carbonate, calcium pyrophosphate, calcium silicate, calcium aluminate, or mixtures thereof.

The secondary reference is cited to demonstrate the state of the art with regard to toothpaste formulation, and discloses toothpastes containing various polysaccharide gum thickeners, including xanthan and guar. See column 2, lines 36-56. As is well-known in the art, the use of various abrasives is taught, including calcium pyrophosphate, calcium carbonate, alumina, aluminum silicate, and silica. See column 4, lines 54 *et seq.* The secondary reference differs from the instant claims insofar as it is silent regarding crosslinked polyacrylic acid polymers.

Established precedent holds that it is generally obvious to add known ingredients to known compositions with the expectation of obtaining their known function. See, *e.g.*, In re Linder, 457 F.2d 506, 507 (CCPA 1972); see also In re Dial, 326 F.2d 430, 432 (CCPA 1964). Accordingly, it would have been obvious to have added calcium pyrophosphate or calcium carbonate to the toothpastes of the primary reference since they are known abrasives for toothpastes as taught by the secondary reference, consonant with reasoning of such precedent. (There are many other sound reasons for doing so as well; for example, calcium carbonate would be preferred where reducing cost was a primary consideration; see Applicant's admission at the first paragraph of page 3 of the instant specification).

3) Claims 4-7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rennie (USP 5,368,843) in view of Lynch et al (USP 4,855,128), the combination being taken further in view of Brown (USP 2,798,053).

The primary and secondary references, and the motivation for their combination are discussed supra. The combined teachings of these references differ from the instant claims insofar as the primary reference only generally discloses carbopols, without specifying the particular comonomers and crosslinking agents used.

The tertiary reference demonstrates the state of the art with regard to "carbopols", *i.e.* crosslinked acrylic acid copolymers. As disclosed therein, they are useful as thickeners (rheology stabilizing agents) in various fields, including that of toothpaste manufacture. See column 1, lines 65-67, and working example 4 at column 10. A wide variety of carbopols are available, including copolymers containing units derived from methyl acrylate, ethyl acrylate, and methyl

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vinyl ether (column 5, lines 53 *et seq.*); preferred crosslinking agents include alkenyl polyethers of polysaccharides, such as allyl ethers of sucrose (column 4, lines 4-16; see also the specific disclosures of column 7, lines 35-40 and column 10, lines 6-10). As taught at the first two lines of column 11, carbopols are particularly effective thickeners because they provide excellent storage stability, as reflected by the absence of phase separation over time.

It would have been obvious to have used carbopols produced from acrylic acid, monoester comonomers, and allyl ethers of sucrose as the thickening agents of the compositions suggested by the combined teachings of the primary and secondary references, motivated by the desire to provide toothpastes having minimal phase separation over time as taught by the tertiary reference.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick Krass whose telephone number is (571) 272-0580. The examiner can normally be reached on Monday-Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marschel Ardin, can be reached at (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick Krass
Primary Examiner
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